

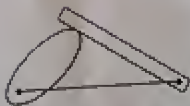
## Sheet 1 (Mechanisms)

Q6

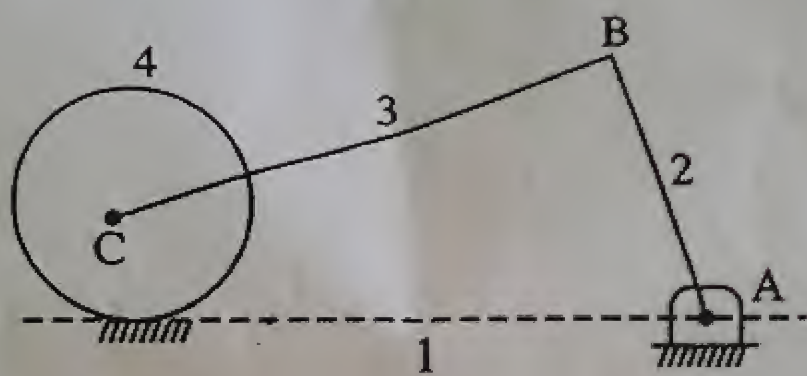
Calculate the DOF of each of the following mechanisms



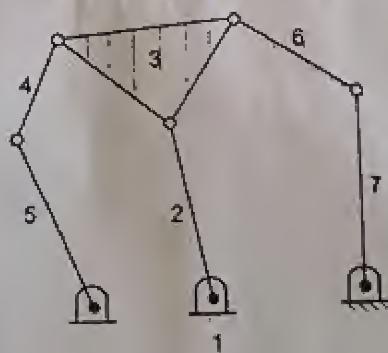
(a)



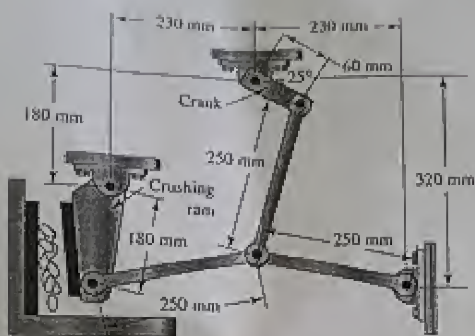
(b)



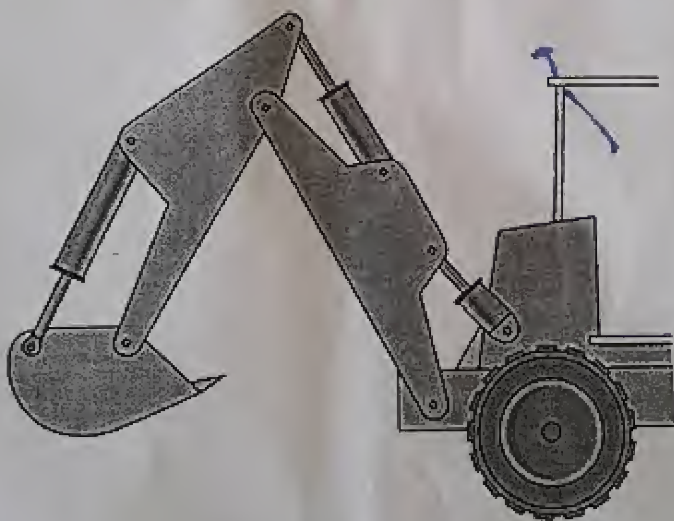
(c)



(d)



(e)



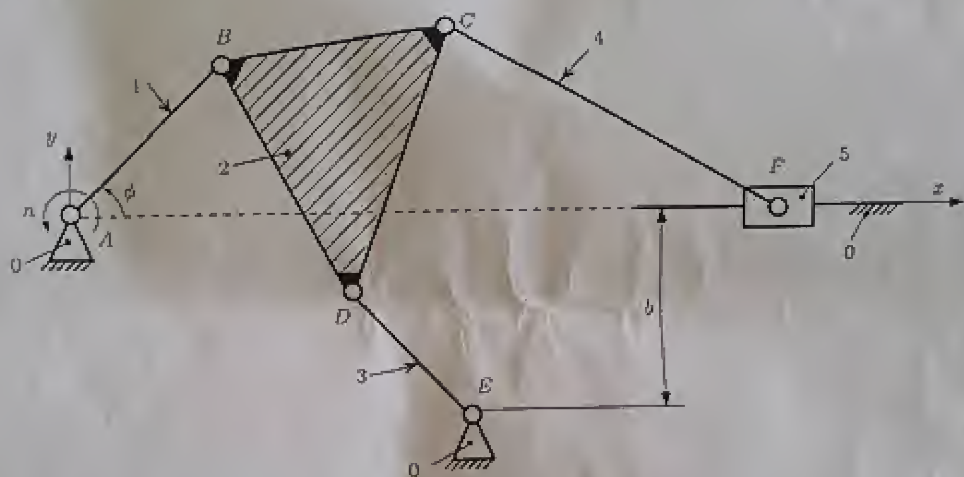
(f)

**Q3.**

The dimensions for the mechanism are:

$AB = 250$  mm,  $BD = 670$  mm,  $DE = 420$  mm,  $AE = 640$  mm,  $BC = 240$  mm,  $CD = 660$  mm,  $CF = 850$  mm, and  $b = 170$  mm.

The angle of driver link 1 with the horizontal axis is  $\phi = \phi_1 = 30^\circ$ . Find the positions of the joints and the angles of the links.



Q2.

In a crank and slotted lever quick return mechanism, as shown in Fig. 5.37, the driving crank length is 75 mm. The distance between the fixed centers is 200 mm and the length of the slotted lever is 500 mm. Find the ratio of the times taken on the cutting and idle strokes. Determine the effective stroke also.

